JACK (F. L.)

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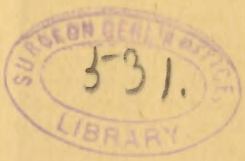

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Case I.—Septic thrombosis of the lateral sinus; opening of mastoid, pus evacuated; a week later, sinus opened and another abscess found; death.

This case, although resulting fatally after operation, has a sufficiently interesting history to warrant a brief report.

Mr. P. T., 33 years old. Had otorrhœa for years. March 25th, 1894, had severe pain in the right ear for two days, anterior and superior walls of the auditory canal and parts in front of the tragus œdematous. Discharge from the ear moderate and watery. No redness or tenderness on pressure over the surface of the mastoid. For two days after removal of a polypus the patient was more comfortable, when suddenly, towards morning, he had a chill, with a temperature of 105° F. It was very evident that pus was confined somewhere in the innermost parts of the ear, and an immediate operation was advised to evacuate the abscess, which I suspected might extend to the sigmoid groove.

At daylight the patient was removed to a private hospital, and within a few hours operated on. The mastoid cavity was opened in the usual way. The bone over the antrum was thick, and when nearly to the depth of one-

half inch considerable foul-smelling fluid was liberated. The antrum and mastoid cells contained cholesteatomatous masses, which were thoroughly removed by means of a curette, and free communication was established with the ear. The operation was continued with the mallet and chisel until all the diseased bone was removed, and the wound thoroughly irrigated with 1–4000 corrosive sublimate solution. Smallest probes failed to disclose any communication with the sigmoid groove. The wound was kept open with iodoform gauze, and was subsequently treated with antiseptic syringing and daily dressings. The effectiveness of the operation was shown in the rapidly falling temperature, 105° to 99½° F., in a few hours, with corresponding lessening of pulse rate from 120 to 85. The patient continued free from pain for seven days, with nearly normal temperature and pulse rapidly decreasing, the discharge from the wound improving daily in odor, which for the first two or three days had been quite offensive.

On the seventh day, in the evening, there was a sudden rise of temperature from the normal to 105°, and an increase in the pulse from 80 to 140, accompanied with a chill. As it was thought advisable to open the lateral sinus, Drs. Green and Mixter were immediately summoned in consultation. The operation was performed within two hours after the chill, by means of artificial light reflected on the field of operation by a large reflector. The incision was carried from the wound backward to the posterior edge of the mastoid, and the lips of the periosteum peeled away. After chiseling in the direction of the sinus through very hard bone to the depth of one-half inch, pus was seen to pulsate through a small opening in the bone. I enlarged the opening by means of a chisel, and exposed the sinus to a distance of one-half inch, lib-

erating considerable pus, which, together with blood, pulsated out. The sinus seemed slightly thrombosed, and the sigmoid groove was opened still further above and below, by Dr. Mixter, without liberating more pus and without finding a continuation of the thrombus. The sinus was then opened in the centre with a knife, and found to bleed very freely. The operation was carried no further, as it was hoped that the small amount of thrombus would not become septic or extend to the jugular.

The temperature and pulse still continued high, the chart being characteristic of septic absorption. The variations were from normal to 106° F., in axilla; pulse from 100 to 150, intermittent. This condition lasted for four weeks, when death occurred.

The chief point of interest in this case centres in the mastoid operation. The question naturally arises, was the lateral sinus affected at the time of this first operation, or did the trouble in it subsequently develop? The solid condition of the bone, the distance of the sinus from the original opening, the failure, after careful search, to establish any communication, seemed to indicate that the abscess in the sigmoid groove came on later.

No autopsy was allowed, but with the probe I examined the wound very carefully. Little or no attempt at healing had taken place. The probe passed easily into the middle fossa. No extra dural abscess. No pus from below.

Case II.—Normal pulsating lateral sinus exposed for half an inch.

C. C. Entered March 31st, 1894. Suppurative process in right ear for some years. Complains of being unable to sleep on account of pain. Examination: membrana tympani of right ear gone; small red granulations

in tympanum; very little discharge; some pain over mastoid, apparently, on pressure.

April 1. Operation under ether. Usual opening down to mastoid. No roughness or red bone. Mastoid opened with a chisel at a point one-half to three-quarters of an inch back of meatus and on level with it. Immediately on getting through cortex a whitish membrane was seen. This could be pressed to one side, but would immediately spring back into place on being released. On opening along this membrane for about one-half an inch with a small chisel, it was seen to be without doubt the lateral sinus. No mastoid cells were found; no pus, and no cholesteatoma. Wound douched with corrosive and stitched up, a small piece of dressing being packed into lower part to absorb any hemorrhage.

April 3. Sinus can be seen to pulsate with the heart. Packing removed and wound allowed to heal in.

April 10. Wound entirely healed; much pain in front of ear. Nothing in meatus to explain pain, and no tenderness of mastoid. No bad teeth. Small cantharidal blister applied to front of tragus.

April 11. Larger blister applied. Pain severe and some swelling.

May 1. Effects of blister gone. Pain still continues without any explanation.

Case III.—Mastoid operation. Inner table of the mastoid removed, exposing an inch of dura mater. Recovery.

M. H. Entered February 14th, 1894. Rather poorly-developed child, evidently specific, and with a vacant expression. Scarlet fever a month ago, with discharge from both ears, and mastoid abscess on both sides. Examination: profuse purulent discharge from both ears, and perforations with everted granular edges over both

mastoids. Child was so weak that operation was deferred, and, two days after entrance, came down with membranous throat. Isolated, and membrane examined. Found to contain streptococci, but no Klebs-Löffler bacilli.

On March 23d the child was moved back to the general ward. In the meantime, the sinus into the left mastoid had entirely healed under the syringing with permanganate of potash and the treatment which the granulations received. The opening still remained over the right mastoid, and the Bowman probe went into this opening nearly to the haft.

April 3. Operation under ether. Incision over right mastoid showed large masses of granulations and softened bone. Cross-cut made backward and large area exposed. Sequestrum one-half inch square came away from cortex. This revealed another sequestrum underneath, freely movable on granulations. Bone and granulations carefully removed, showing a white membrane (size of quarter dollar), evidently dura. All loose bone and granulations carefully cleaned out, and wound syringed with corrosive solution. Packed with iodoform gauze and baked dressing applied.

Since the operation, the wound has gradually been granulating in, and at the present time the patient is about ready to be discharged from the Infirmary.

Case IV.—Opening of the mastoid. Exposure of the dura mater and lateral sinus. Recovery.

M. H. Entered April 19th, 1894. Left mastoid successfully operated on two years ago for acute mastoiditis. No return of trouble.

Had suppurative discharge from right ear when a baby. No apparent trouble from it until about three months ago, when the discharge became quite profuse. Considerable

pain for last ten days. Appeared at the clinic, April 18th, for the first time during the present trouble, and operation was at once advised.

Examination on entrance showed purulent discharge from small perforation in posterior part of membrana tympani (right), and an open sinus into mastoid (right).

April 20. Operation. Paracentesis of right membrana tympani. Usual incision over mastoid; cortex all soft. After scraping in for some distance, came to antrum, which was full of inspissated pus. On curetting mass of granulations on posterior wall of mastoid, found that they were directly connected with lateral sinus. Opening enlarged a little and probe passed in along sigmoid groove. Higher up in the mastoid (one-quarter inch above upper wall of meatus) was an opening which had a red and granular membrane at the bottom. This could be easily pressed inwards, and was decided to be the dura. Wound douched thoroughly and packed with iodoform gauze.

This case also has been granulating in well, although rather slowly. The patient is still in the house.

Case V.—Opening of the mastoid and carotid canal. Recovery.

H. W. Entered April 11th, 1894. Left ear has been running for a year; swelling over mastoid for last three months.

Examination on entrance showed purulent discharge from left auditory canal, with fluctuating tumor over mastoid. Membrana tympani could not be seen, on account of swelling of walls of meatus.

The parents consented to an immediate operation. Ether was given, and I made the usual incision over the mastoid. The knife went in very deeply, and, on retracting

the tissues, it was discovered that there was no cortex to the mastoid at all. The mastoid was one mass of granulations. These were curetted out. The anterior wall of the mastoid was found to be carious, and was almost entirely removed, revealing the carotid artery. There were the remains of a sinus in the left cheek which had apparently healed but recently, and this sinus probably led inward and backward to the anterior wall of the mastoid. The wound was thoroughly syringed out, a drainage tube inserted, and baked dressing applied.

The drainage tube was removed on the second day after the operation, and the wound kept open with gauze packing. It still syringes through from the mastoid opening to the meatus quite freely.

Case VI.—Sequestrum of the whole temporal bone. Opening of dura and sinus. Recovery.

J. F. M. Entered April 11th, 1894. Right ear running for eight months. Swelling behind the ear six months ago incised by family physician. On entrance, there was a purulent discharge from the right ear, with swelling of the upper wall of the canal. Open sinus into mastoid.

April 11. Operation with ether. Incision over mastoid. Bone, as far as seen along cortex, softened and necrosed. Considerable of this was removed just above and behind mastoid; dura was exposed. On opening mastoid, the posterior wall came away under the curette, exposing the lateral sinus. It was then discovered that pressure caused the whole temporal bone to move. As far as explored it was soft, and was probably a large sequestrum. Operation abandoned; wound loosely packed with iodoform gauze, and baked dressing applied. At the present time the wound over the mastoid has entirely

healed in. There is a slight purulent discharge from the tympanum.

Patient discharged, May 16th, 1894.

Case VII.—Opening of mastoid and Fallopian canal.

M. F. Entered March 14th, 1894. No ear trouble until last fall; then intense pain in right ear, followed by sickness called "brain fever." This lasted for about two months. Four weeks ago intense pain in ear, followed by discharge and relief to pain. Since then pain has been intermittent.

Examination revealed enormous swelling of posterior wall of canal, right ear, with some purulency. No tenderness of mastoid. Membrana tympani could not be seen. Probe passed through perforation in top of swelling showed rough bone on posterior wall of canal.

The patient was put upon warm douching for some time without any improvement. It was finally decided to open down the canal wall, and the patient consented to operation.

April 2. She was etherized and the usual mastoid incision made. There was no roughness of the bone on cortex. Opened bone down posterior wall of canal, and found carious perforation leading into mastoid cells. Mastoid thoroughly opened, and much cholesteatoma and débris removed. Syringed through freely. Drainage tube and baked dressing.

April 4. Very little discharge. Drainage tube removed.

April 12. Purulent discharge still continues. Bare bone felt in tympanum and along posterior wall of canal. Patient consents to secondary operation.

Again etherized and former incision reopened. Large part of posterior wall of canal removed. Bare bone in

tympanum curetted. Wound packed with iodoform gauze and baked dressing applied.

April 13. Marked paresis of right facial nerve.

Since this time the patient has been doing very nicely. At one time the walls of the canal showed a little tendency to unite, but by dilating with tupelo wood and afterwards packing the canal this trouble was overcome. At the present time the wound has entirely healed in, and there is no discharge from the tympanum. The facial trouble has entirely passed away, and the patient is seen only occasionally in the out-patient clinic.

Cases VIII., IX., and X.—Mastoid abscess, with extension of pus into neck.

B. P. Entered April 7th, 1894. Scarlet fever two months ago, followed by discharge from left ear. Poultices applied at home, but pain increased, and swelling began to appear.

When she first appeared at the Infirmary there was a profuse purulent discharge from left ear. The perforation in the membrana tympani could not be seen, on account of swelling in the canal walls. Tense, brawny swelling over left mastoid region, extending nearly two inches down sterno-cleido-mastoid muscle.

Patient was at once prepared for operation, which was done the same evening.

Operation under ether. Free paracentesis of membrana tempani. Usual incision over mastoid, followed by escape of nearly ℥ii of greenish pus. Free hemorrhage. Small carious spot directly over mastoid cells was enlarged and granulations removed. Mastoid extremely shallow and broad. Large spot of caries at posterior extremity of cells, through which pus had worked its way down into the neck. Probe went into cavity just behind sterno-

cleido-mastoid about an inch long. This was opened up its whole length and thoroughly douched out. Drainage tube put into mastoid, lower part of wound packed with iodoform gauze, and upper part sutured. Baked dressing applied.

In this case the wound granulated in rather slowly, as the girl was in bad general condition when she came into the Infirmary. By the 4th of May, however, she had so far recovered as to be discharged with only a collodion dressing. The middle ear was entirely healed, without perforation of membrana tympani, and there was only a small granulating wound over place of operation.

Case IX.—M. H. Entered April 16th, 1894. Left ear has been running for some months. Pain and swelling in meatus three weeks ago. Subsided under treatment, but came on again in a short time.

Examination: colored woman, evidently much run down by overwork and pain. Tremendous purulent discharge from left ear. Some swelling of posterior wall of canal, and perforation of membrana tympani in posterior quadrant. Great tenderness over antrum and some stiffness of neck.

For two days the patient wore a Leiter coil over the mastoid, and had the ear syringed every hour, but without relief. The mastoid tenderness seemed to be increasing, and operation was advised.

Operation, April 18th, under ether. Free paracentesis of membrana tympani. Usual incision over left mastoid, which was found to be sclerosed. Antrum not found even at a depth of three-quarters of an inch. Two small cells found in posterior part of mastoid, and in the extreme posterior part was a broken down cavity extending backward along cortex of skull for half an inch. This was

carefully cleaned out, wound syringed with corrosive, packed with iodoform gauze, and baked dressing applied.

Recovery has been very slow, but wound has been gradually granulating in, and patient is now nearly ready to leave the house.

Case X.—L. V. Entered April 26th, 1894. No previous ear trouble. Six weeks ago earache following cold. Pain in left ear, which continued pretty steadily, even after rupture of membrana tympani. On entrance, there was noticed a profuse purulent discharge from the left ear. Walls of canal, especially upper and posterior, much swollen. Small perforation in the posterior part of membrana tympani, which was bulging. Swelling, redness, and tenderness over left mastoid, and extending about two inches down sterno-cleido-mastoid muscle.

The mastoid was prepared for operation. During the night a quarter grain of morphia was needed for pain. The day following entrance, ether was given and usual mastoid incision made. No opening found on the outer part of cortex. Bone opened with gouge, and cells found full of pus. Mastoid very shallow and broad, with perforation at extreme posterior outer part. Small beginning cavity in neck. Counter opening in neck for drainage about two inches below mastoid tip, and drainage tube inserted. No opening found into antrum. Free paracentesis of membrana tympani. Wound thoroughly douched, packed with iodoform gauze, and baked dressing applied.

This case healed satisfactorily, and is now being treated as an out-patient, there being still a small granular spot over the mastoid on which she wears a collodion dressing.

Case XI.—Osteoma removed from auditory meatus.

M. F. Entered April 30th, 1894. Had pain in right ear for a few days about four years ago, followed by suppurative discharge. This soon stopped. No further discomfort from ear except deafness. Lately has felt something in the meatus.

Examination: round hard tumor at entrance of right meatus, and completely blocking it. Small probe goes in about one-quarter of an inch all around except at upper and back part, where it is probably fastened. No discharge.

Operation: curvilinear incision over mastoid, and auricle and meatus pulled forwards. Tumor then easily removed by rocking first to one side and then the other, and pulling out with forceps. Could not determine whether membrana tympani was present or not. Wound thoroughly douched, incision over mastoid closed with interrupted silk sutures, and meatus packed with iodoform gauze. Baked dressing applied.

Since the operation there has been a very profuse purulent discharge from the ear, and very abundant granulations in the meatus. These have been touched with silver from time to time, and the meatus now seems to be cicatrizing over. The patient is still in the house. Hearing improved to normal.

Most of the cases reported were operated upon while on duty at the Massachusetts Charitable Eye and Ear Infirmary, during the month of April, 1894. In all of these operations the chisel and curette were used until all of the diseased bone, with granulations, were thoroughly removed. The wound was left entirely open and loosely packed with iodoform gauze, to allow the bone to slowly heal from the bottom. This method delays

healing somewhat, but experience has shown that in too rapid healing a space is apt to remain in the mastoid which may subsequently fill with cholesteatomatous masses, again lighting up a carious process. In nearly all cases in which the lateral sinus was exposed, a pulsation, probably transmitted from the brain and synchronous with the heart-beat, was noticed until the wound healed in sufficiently to cover it. All of the cases, with one exception, recovered or are well along in their convalescence.

A retractor devised by Dr. Hammond, the house officer, has proved very useful in mastoid operations.[1]

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[1]This instrument is so constructed that when properly inserted into the mastoid opening it holds the anterior flap and auricle forward, out of the way of the operator, requiring only a moderate force applied in a direction parallel to its long axis.

The body is made in one solid piece instead of in strips, as it the better serves to control any oozing from small blood-vessels in the flap by compressing them, and the curves are arranged in such a way as to have no projecting angles, giving the operator the maximum of room. At the end of the body are two curved teeth, which prevents the retractor from slipping up and out of the wound. The hollow which you see between the teeth serves to protect the cartilaginous meatus. The slight force exerted by pulling with one finger in the handle is often sufficient to give the operator all the room he desires.